Air Force Research Laboratory|AFRL

Science and Technology for Tomorrow's Air and Space Force

Success Story

ULTRASHORT LASER BIOEFFECTS TEAM NAMED AFOSR STAR TEAM

The Air Force Office of Scientific Research (AFOSR) recently selected the Advanced Ultrashort Laser Bioeffects Team of the Human Effectiveness Directorate as an AFOSR Star Team. This is an the second 2-year term for this team's selection as an AFOSR Star Team. Star Team status substantiates the directorate as a world leader in helping the Air Force evaluate the mission impact of escalating laser threats, and it affirms the directorate's reputation as a world-class center for laser-tissue interaction research.

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Accomplishment

The directorate's Advanced Ultrashort Laser Bioeffects team, recently selected as an AFOSR Star Team, will provide information that will play an important role in establishing new national, international, and military laser safety standards used for the development of appropriate concepts-of-operation for laser weapons.

Background

Over the past decade, the directorate conducted basic research to determine the threshold levels at which ocular exposures to short-pulsed (sub-nanoseconds in duration) laser light will produce retinal damage. The research team identified three new mechanisms for retinal damage from laser exposure.

The team performed other basic research and developed biological databases to demonstrate that nonlinear physical mechanisms are generally responsible for producing lesions on retinas exposed to these extremely short pulses of laser light. Information obtained from this research played an important role in establishing new national, international, and military laser safety standards used for the development of appropriate concepts-of-operation for laser weapons. The biological databases developed provide the foundation for validating future models of ocular damage from new generations of military lasers.

Human Effectiveness
Awards and Recognition

Additional information

To receive more information about this or other activities in the Air Force Research Laboratory, contact TECH CONNECT, AFRL/XPTC, (800) 203-6451 and you will be directed to the appropriate laboratory expert. (03-HE-10)